# $U_2A^{tm}$ – Urea to Ammonia Technology

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**Summary**

Initial commercial scale experience with $U_2A^{tm}$ – Urea to Ammonia was first presented at the 2001 NETL SCR/SNCR Conference, which described the demonstration project conducted by Wahlco, Inc. and Hamon Research-Cottrell, Inc. at the AES/Alamitos generating facility.

The acceptance of urea as a safer alternative compared to ammonia transport and storage has blossomed since that time. As of May 2002, the $U_2A$ process has been selected for installation at nine different plants totaling about 10,000 MWe, to provide the ammonia requirements for both large coal fired boiler SCR systems (for up to 10,000 lb/hr $NH_3$) as well as small combustion turbine SCR systems (with less than 30 lb/hr $NH_3$ demand.

The system at AES/Huntington Beach Station Units 1&2 has now accumulated over 7000 hours of operation since July 2001, with one $U_2A$ hydrolysis reactor servicing two cycling boilers, providing ammonia from urea at a turndown ratio of 20:1 and at an availability of greater than 99.5%.

The fundamental feature of the $U_2A$ process (U.S. Patent 6,077,491) as offered to SCR projects is the simplicity of the thermal hydrolysis approach with respect to equilibrium operation, once through processing, and process response and control. The operation is essentially the same for each project regardless of the ammonia capacity. No changes in the system design or operating philosophy have been required to satisfy the wide demands of the range of SCR projects.

The poster presentation will review some fundamental technical aspects of the $U_2A$ process as well as operation and control.